

**THE OFFICE OF REGULATORY STAFF**  
**DIRECT TESTIMONY**  
**OF**  
**WILLIE J. MORGAN, P.E.**

**AUGUST 17, 2011**



**DOCKET NO. 2011-47-WS**

**Application of Carolina Water  
Service, Incorporated for Approval of  
an Increase in Its Rates for Water and  
Sewer Services Provided to All of Its  
Service Areas in South Carolina**

**DIRECT TESTIMONY OF WILLIE J. MORGAN, P.E.**

**FOR**

**THE OFFICE OF REGULATORY STAFF**

**DOCKET NO. 2011-47-WS**

**IN RE: APPLICATION OF CAROLINA WATER SERVICE, INCORPORATED**

**FOR APPROVAL OF AN INCREASE IN ITS RATES FOR WATER AND**

**SEWER SERVICES PROVIDED TO ALL OF ITS SERVICE AREAS IN SOUTH**

**CAROLINA**

**Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS AND  
OCCUPATION.**

A. My name is Willie J. Morgan, and my business address is 1401 Main Street, Suite 900, Columbia, South Carolina 29201. I am employed by the South Carolina Office of Regulatory Staff (“ORS”) as the Program Manager for the Water and Wastewater Department.

**Q. PLEASE STATE YOUR EDUCATIONAL BACKGROUND AND  
EXPERIENCE.**

A. I received a Bachelor of Science Degree in Engineering from the University of South Carolina in 1985 and a Master of Arts Degree in Management from Webster University in 2000. I am a licensed Professional Engineer registered in the State of South Carolina and have completed the Certified Public Manager Program. My professional affiliations include membership in the American Water Works Association (“AWWA”), the South Carolina Section of

1 the American Water Works Association (“SC-AWWA”) and the National Society  
2 of Professional Engineers (“NSPE”). Also, I have served as a Director for the  
3 Columbia Chapter of the South Carolina Society of Professional Engineers. After  
4 graduating from the University of South Carolina, I was employed by the South  
5 Carolina Department of Health and Environmental Control (“DHEC”) as an  
6 Environmental Engineer Associate. Later, I was promoted to the position of  
7 Permitting Liaison where I assisted industries and the public with environmental  
8 permitting requirements in the State of South Carolina. This assistance included  
9 providing information about air quality, solid and hazardous waste management,  
10 and water and wastewater management requirements. I was employed by DHEC  
11 for nineteen years. In October 2004, I joined ORS as the Program Manager for  
12 the Water and Wastewater Department.

13 **Q. HOW LONG HAVE YOU PROVIDED REGULATORY OVERSIGHT**  
14 **AND ENGINEERING SERVICES TO WATER AND WASTEWATER**  
15 **FACILITIES?**

16 A. I have over twenty-five years of regulatory compliance experience  
17 providing assistance and regulatory oversight for water and wastewater facilities  
18 and services.

19 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS**  
20 **PROCEEDING?**

21 A. The purpose of my testimony is to set forth the ORS staff findings relative  
22 to the rate increase application submitted by Carolina Water Service, Inc.  
23 (“CWS”). Specifically, I will focus on CWS’s compliance with the Public

1 Service Commission of South Carolina's ("Commission" or "PSC") rules and  
2 regulations, ORS's compliance review of CWS's water and wastewater systems,  
3 test-year revenue, calculated proposed revenue, performance bond requirements,  
4 and proposed changes to CWS's tariff language.

5 **Q. ARE THE FINDINGS OF YOUR REVIEW CONTAINED IN THIS**  
6 **TESTIMONY AND ACCOMPANYING EXHIBITS?**

7 A. Yes, my testimony and the attached exhibits detail ORS's findings and  
8 recommendations.

9 **Q. PLEASE EXPLAIN HOW YOU COMPILED INFORMATION FOR YOUR**  
10 **TESTIMONY AND EXHIBITS.**

11 A. I used ORS compliance review results, information provided by CWS in  
12 its application and additional information provided by CWS during the course of  
13 our business review and facility site inspections. I also reviewed CWS's financial  
14 statements and performance bond documents submitted to the Commission.

15 **Q. PLEASE PROVIDE AN OVERVIEW OF THE LOCATIONS, SERVICE**  
16 **TYPES AND CUSTOMER BASE SERVED BY CWS.**

17 A. CWS is a public utility providing water supply/distribution services and  
18 wastewater collection/treatment services. As a subsidiary of Utilities, Inc.,  
19 CWS's South Carolina operations are classified by the National Association of  
20 Regulatory Utility Commissioners ("NARUC") as a Class A water and  
21 wastewater utility according to water and sewer revenues reported on its  
22 application for the test year ending September 30, 2010. The Commission-  
23 approved service area for CWS includes portions of Aiken, Beaufort,

1 Georgetown, Lexington, Orangeburg, Richland, Sumter, Williamsburg, and York  
2 Counties. According to CWS's customer records for the test year ending  
3 September 30, 2010, ORS determined that CWS was providing water  
4 supply/distribution services to 7,645 residential and commercial customers and  
5 wastewater collection/treatment services to 10,962 residential and commercial  
6 customers.

7 **Q. PLEASE EXPLAIN EXHIBIT WJM-1 OF YOUR REPORT.**

8 A. Exhibit WJM-1, consisting of seventeen pages, is a summary of the water  
9 supply/distribution and wastewater collection/treatment systems inspected by  
10 ORS on July 18, 20, 21, and 26, 2011.

11 **Water Supply/Distribution System**

12 CWS currently provides adequate water supply and distribution services to  
13 its residential and commercial customers. Water is provided to customers by  
14 CWS-operated wells or by an outside bulk water provider. In some cases, CWS  
15 purchases water to serve customers from governmental entities such as the City of  
16 West Columbia, Town of Lexington, Lexington Joint Municipal Water and Sewer  
17 Commission, and York County. There are a total of twenty-one (21) water  
18 systems operated by CWS. CWS has made infrastructure improvements, and  
19 repaired and replaced pump houses, storage tanks and operating wells. Safe  
20 drinking water standards were being met according to recent DHEC sanitary  
21 survey reports and required certified operator logs were in compliance at ORS-  
22 audited facilities. A Consent Order was executed on July 14, 2011 between  
23 DHEC and CWS for exceeding the maximum contaminant level ("MCL") for

1        arsenic at Lakewood Estates, a water system in Lexington County. General  
2        housekeeping items including treatment chemical labeling, facility fencing, access  
3        roads and signage are satisfactory. Potable water and irrigation consumption is  
4        metered to all customers. With the exception of the Lake Wylie community,  
5        CWS does not provide fire protection services to its customers and is not required  
6        to provide this service. No major construction activity is being proposed by CWS  
7        for its water systems.

8        **Wastewater Collection/Treatment System**

9        CWS provides wastewater treatment pursuant to National Pollutant  
10       Discharge Elimination System (“NPDES”) and No Discharge permits. During the  
11       ORS inspection, the majority of the wastewater collection and treatment systems  
12       were operating adequately. DHEC issued a Notice of Violation on May 13, 2011  
13       for CWS’s I-20 Regional Wastewater Treatment Plant (SC0035564) for  
14       biochemical oxygen demand (“BOD”) violations. In addition, since January  
15       2010, several warning letters have been issued by DHEC to CWS for NPDES  
16       permit violations including Ammonia, Fecal Coliform, and Total Residual  
17       Chlorine exceedance.

18       CWS operates a total of nine (9) wastewater collection and treatment  
19       systems. In addition, CWS operates six (6) wastewater collection only systems  
20       for which it collects wastewater from its customers and transports the wastewater  
21       to another entity for treatment and disposal. Wastewater treatment and disposal is  
22       provided to CWS collection only customers by Beaufort-Jasper Water and Sewer  
23       Authority, Richland County, Town of Chapin and York County.

1 While no sanitary sewer overflows (“SSO”) were noted during the ORS  
2 site visits, there have been instances of SSOs from the collection system during  
3 the test year and in 2011.

4 In addition, ORS identified several infrastructure improvements which  
5 were not complete and/or not in service during the ORS site visits. The following  
6 project costs were removed from CWS’s rate base:

- 7 1. Digester tank and blowers at the Whites Creek/Lincolnshire wastewater  
8 treatment plant;
- 9 2. Site work for foundation in preparation to install ultra-violet disinfection  
10 treatment system at the Whites Creek/Lincolnshire wastewater treatment  
11 plant; and,
- 12 3. Ultra-violet disinfection treatment system at the Pocalla wastewater  
13 treatment plant.

14 **Q. DOES ORS RECOMMEND ANY ADJUSTMENTS TO THE TEST YEAR**  
15 **REVENUES OF CWS?**

16 A. Yes. ORS completed a review of CWS’s customer water consumption  
17 and base facility charge (“BFC”) revenue calculations and its sewer revenue  
18 calculations for the test year. Based on that review, ORS made revenue  
19 adjustments totaling \$415,833 as shown on Audit Exhibit SGS-1. These revenue  
20 adjustments normalize the customer billing information provided by CWS. ORS  
21 imputed a significant amount of test year revenue based on customer billing  
22 information provided in the CWS application, supplemental customer data  
23 provided by CWS, and ORS verification of active customers. Commission  
24 approved rates were applied to all customers.

25 **Q. EXPLAIN THE TEST YEAR REVENUE INFORMATION CALCULATED**  
26 **BY ORS FOR CWS.**

1 A. Exhibit WJM-2 summarizes CWS's service revenues for the test year  
2 ending September 30, 2010. ORS used CWS's current and proposed rates as  
3 reflected in the Application for these calculations. ORS calculated test year  
4 revenue based on customer billing information provided in the Application,  
5 supplemental data provided by CWS, and the ORS audit. Based on our review,  
6 an adjustment to service revenue is required for the test year ending September  
7 30, 2010. In summary, ORS calculated CWS's test year service revenue for water  
8 operations, as adjusted, of \$2,433,619. ORS calculated CWS's test year service  
9 revenue for wastewater operations, as adjusted, of \$5,326,535. ORS calculated  
10 test year service revenues for combined operations, as adjusted, of \$7,760,154.  
11 For comparison purposes, ORS calculated CWS's proposed water service  
12 revenues, as adjusted, of \$4,407,255. ORS calculated CWS's proposed  
13 wastewater service revenues, as adjusted, of \$6,052,789. At CWS's proposed  
14 rates, combined service operating revenue, as adjusted, would total \$10,460,044.

15 ORS did not factor customer growth into these revenue comparisons. As  
16 shown in Exhibit WJM-3, the projected growth for CWS for water and  
17 wastewater service is 1.004%.

18 ORS proposes a \$94,397 adjustment to CWS's test year Miscellaneous  
19 Revenues based on CWS's revenue records, late payment calculations and the  
20 NARUC Chart of Accounts. The Total Miscellaneous Revenues for the test year,  
21 as adjusted, is \$259,354. ORS calculated proposed Miscellaneous Revenues for  
22 CWS, as adjusted, of \$528,791 using CWS's proposed rates and ORS  
23 synchronized Late Fees revenue to the proposed rates in CWS's application.



1 From a review of CWS's records, ORS found that an allowance for future  
2 uncollectible accounts or bad debt expense of (\$79,840) to be appropriate for the  
3 applicant's proposed revenues. This amount is computed using the as adjusted  
4 uncollectible accounts at present rates of \$79,035. ORS reviewed the historic bad  
5 debt expense incurred by CWS and the billing records and practices of CWS to  
6 determine an appropriate uncollectible allowance. ORS identified that CWS  
7 continued to bill active accounts during the test year month after month even  
8 though payment was not received from the customer. CWS did not verify  
9 occupancy, initiate service termination procedures, or manage these delinquent  
10 accounts in accordance with its collections process. Therefore, CWS allowed an  
11 inordinate amount of unpaid invoices and late fees to accrue during the test year  
12 that were uncollectible and eventually written off to bad debt expense. ORS  
13 recommends CWS manage delinquent customer accounts in a manner compliant  
14 with Commission regulations and consistent with their own collections process.  
15 ORS adjusted uncollectible accounts at present and proposed rates are within  
16 1.1% of service revenues.

17 **Q. DO YOU HAVE ANY SUGGESTIONS FOR CWS TO IMPROVE ITS**  
18 **COLLECTIONS PROCESS ON DELINQUENT CUSTOMER**  
19 **ACCOUNTS?**

20 Yes. During the test year, CWS changed its collections process.  
21 According to the information provided to ORS by CWS, the utility is now  
22 attempting to collect from delinquent customers by utilizing the following  
23 process:

1. Outstanding balance letter – 1 to 3 days after due date
2. Collection agency letter – 30 days after Step 1
3. Second Collection Agency Letter – 30 days after Step 2
4. Referred to Collection Agency – 30 days after Step 3
5. Written off – 60 days after Step 4

The old process was similar, but a change was made by CWS “to refer outstanding debt to the collection agency sooner in an effort to collect on bad debt.” ORS considers the current process reasonable. However, CWS must follow through with consistent implementation of the plan.

**Q. PLEASE EXPLAIN THE STATUS OF THE PERFORMANCE BOND FOR CWS.**

A. CWS has a current performance bond for utility operations in the form of an Irrevocable Letter of Credit (“ILC”) from JPMorgan Chase Bank, N.A. as surety in the amount of \$350,000 for water and \$350,000 for wastewater operations. Based on the expenses from the test year and using the criteria set forth in 26 S.C. Code Ann. Regs. 103-512.3.1 and 103-712.3.1, ORS determined that the face amount of CWS’s bond should be \$350,000 for water operations and \$350,000 for wastewater operations. ORS respectfully requests that the Commission require CWS to continue to maintain the current performance bond amount for water operations in the amount of \$350,000 and for wastewater operations in the amount of \$350,000 as it is in the public interest for CWS to maintain a bond that satisfies the criteria as set forth in S.C. Code Ann. § 58-5-720 (Supp. 2010).

1 **Q. ON WHAT BASIS DOES ORS MAKE DEPRECIABLE SERVICE LIFE**  
2 **RECOMMENDATIONS?**

3 A. ORS recommendations are based on the conclusions outlined in the  
4 Florida Public Service Commission Water and Wastewater System Regulatory  
5 Law as recommended by the NARUC staff. ORS's approach and conclusions  
6 made concerning depreciation are also consistent with the Public Utility  
7 Depreciation Practices manual as published by NARUC in 1996.

8 **Q. DOES ORS FIND CWS'S REQUEST TO INCREASE ITS NOTIFICATION**  
9 **FEE FOR DELINQUENT SEWER CUSTOMERS REASONABLE?**

10 A. Yes. 26 S.C. Code Ann. Regs. 103-535.1. requires that a 30 day notice be  
11 given prior to discontinuance of sewer service to a delinquent customer and that  
12 this notice be given by certified mail. If a second notice is necessary, it must be  
13 provided by certified mail. As justification for its request, CWS states that the fee  
14 assesses a portion of the clerical and mailing costs of such notices to the  
15 customers that create the cost. Due to increases in postage by the U.S. Postal  
16 Service and other cost associated with mailing Certified/Return Receipt mailings,  
17 ORS considers the increase from \$4.00 to \$15.00 to be reasonable.

18 **Q. WHAT IS ORS'S POSITION REGARDING CWS'S REQUEST TO ADD**  
19 **THE NON-RECURRING CHARGES FOR DISCONNECTION, METER**  
20 **INSTALLATION, TAMPERING, AND PUMPING?**

21 A. CWS proposes to add several non-recurring charges to its rate schedule in  
22 order to recover costs associated with performing certain services and

1       damaging/tampering with CWS service lines and equipment. I will address each  
2       non-recurring charge separately.

3       **Disconnection Charge for Water and Sewer Service**

4               CWS is proposing a Disconnection Charge for the discontinuance of  
5       service to a customer for violation of rules and regulations, nonpayment of bills,  
6       or fraudulent use of service or at the request of the customer as allowed under 26  
7       S.C. Code Ann. Regs. 103-532.4. and 103-732.5. The charges proposed by CWS  
8       are to reimburse CWS for the cost of physically disconnecting the customer's  
9       service. The proposed amount of the charge in the application is not specific and  
10      refers to the **actual cost** of disconnection with the added language that the amount  
11      is due at the time of disconnection.

12             1) Disconnection for Water Service:

13             CWS identified the cost for performing a water service disconnection as  
14      \$35 which covers the cost of printing/mailing a 10 day disconnection notice,  
15      transportation expense, labor cost, and a meter lock. This cost is reasonable and  
16      ORS recommends the Disconnect Charge be \$35 instead of "actual cost" as  
17      requested by CWS. In addition, ORS recommends the Reconnection Fee for  
18      water service which is currently \$35 be reduced to \$25. This will reflect the  
19      actual costs identified for CWS to travel to the customer site and restore service.  
20      No additional mailing or meter lock is required for a reconnection.

21             2) Disconnection for Sewer Service:

22             During the application review process, ORS requested a detailed expense  
23      justification of the costs to support the Disconnection Charge for sewer service.

1 CWS stated that the expense includes mailing/printing costs to mail termination  
2 notices and other cost which “varies greatly depending on various factors” to  
3 disconnect a sewer customer. CWS did not provide a detailed justification for any  
4 costs to ORS. While ORS understands that elder valves are not installed on all  
5 sewer service connections, CWS could have provided reasonable estimates to  
6 support its request. CWS has also requested an increase to the Notification  
7 Charge for sewer disconnection. CWS cannot include the cost of mailing/printing  
8 notices to sewer customers in its sewer service Disconnection Charge. ORS  
9 cannot support the proposed Disconnection Charge for sewer service at “actual  
10 cost” as presented by CWS in its application as ORS could not evaluate the actual  
11 cost. If the Commission were to approve a Disconnection Charge for water  
12 and/or sewer, ORS recommends that the rate schedule identify a specific dollar  
13 amount for the charge. This would provide transparency to the customer and  
14 assure billing accuracy.

15 **Meter Installation Charge**

16 A Meter Installation Charge of \$100 is proposed by CWS to recover the  
17 actual cost to install a water meter at a customer premise. Also, CWS proposes  
18 that the Meter Installation Charge be increased “with meter size to reflect the  
19 increased cost of meters and appurtenances.” CWS is proposing that the Utility’s  
20 **actual cost** be incurred by the customer for those instances whereby the meter  
21 size is different than 5/8 inches x 3/4 inches. ORS recommends the Meter  
22 Installation Charge be denied by the Commission for the following reasons:

1           1) The charge is unnecessary. CWS states in its Application Exhibit A  
2           page 3 that “all meters 5/8 inches x 3/4 inches shall meet the Utility’s standards and  
3           shall be installed by the developer.” Therefore, CWS will not incur any cost to  
4           install a meter of this size on its system.

5           2) The proposed tariff language is unclear and ambiguous. For example,  
6           it is unclear in the proposed tariff language who would be responsible for  
7           installing a meter that is larger or smaller than 5/8 inches x 3/4 inches. CWS  
8           Application Exhibit A page 3 states that for all other meters, the meters “shall  
9           meet Utility standards and be installed by the Utility unless the Utility directs  
10          otherwise.” During the night hearing in Lake Wylie on August 3, 2011, the  
11          Commission heard testimony from a developer in the Lake Wylie area, Mr. Roger  
12          Schwartz, that indicates that the developer installed meters larger than 5/8 x 3/4  
13          inches at its own expense.

14          Additionally, CWS charged some customers a \$50 “meter set fee” during  
15          the test year. This fee has not been approved by the Commission, and CWS  
16          should be required to refund any customer who paid this fee.

17          **Tampering Charge**

18          CWS proposes a Tampering Charge of **actual cost** to recover the expenses  
19          to repair damaged service lines, valves, meters and equipment. This charge is  
20          designed “to deter customers from tampering with the operation, maintenance, or  
21          repair of a water or sewer service.” 26 S.C. Code Ann. Regs. 103-535.D. and  
22          103-735.D. requires that the customer make “every reasonable effort to prevent  
23          tampering and shall notify the utility immediately of any tampering with damage

1 to, or removal of any equipment.” If the customer complies with this  
2 Commission requirement, CWS should not be allowed to charge the customer for  
3 tampering. CWS estimates that the Tampering Charge will generate  
4 approximately \$3,000 per year based on the charge being applied once per month  
5 at \$250 each. ORS would support the recovery by CWS of all actual expenses  
6 related to repair of damaged equipment or facilities if it can be proven that a  
7 customer willfully damaged or tampered with CWS’s equipment.

### 8 **Pumping Charge**

9 CWS proposes to revise the Pumping Charge for those sewer customers  
10 who utilize a solids interceptor tank to be the **actual cost** with a minimum charge  
11 of \$150.00. CWS stated that there are 1,015 interceptor tanks in use and provided  
12 an estimate that 20% of the tanks are pumped annually. ORS agrees that the  
13 actual cost to pump a solids interceptor tank has increased since the Commission  
14 approved the \$150 charge. ORS requested specific details to support the actual  
15 cost of the services provided by CWS. CWS stated that “actual costs vary from  
16 \$250.00 to \$700.00” but did not provide a specific breakdown of what comprised  
17 those cost estimates and ORS is unable to evaluate if the cost estimate is  
18 reasonable. ORS cannot support the requested revision to the Pumping Charge  
19 as ORS could not evaluate the actual cost.

20 If the Commission were to approve a revision to the Pumping Charge,  
21 ORS recommends that the rate schedule identify a specific dollar amount for the  
22 charge. This would provide transparency to the customer and assure billing  
23 accuracy.

1 **Q. PLEASE DISCUSS YOUR FINDINGS RELATED TO SEWER INFLOW**  
2 **AND INFILTRATION.**

3 A. During the ORS site inspection, the flow at all wastewater treatment  
4 facilities inspected appeared to be functioning normal with the exception of the  
5 CWS sewer system in Georgetown (Lincolnshire SC0030732). Historically, the  
6 CWS sewer system in Georgetown has had excessive inflow/infiltration ("I&I")  
7 which severely impacts the treatment plant's ability to remain in compliance with  
8 the NPDES permit. It is apparent to ORS that CWS has not made progress with  
9 the Georgetown wastewater collection system to reduce the excessive I&I since  
10 the 2006 rate case (Docket No. 2006-92-WS). ORS recommends that CWS  
11 conduct a feasibility study and develop a manageable plan to mitigate the  
12 excessive I&I at its Georgetown system.

13 Prior to this rate case, ORS evaluated CWS's sewer system in Beaufort  
14 serving the Palmetto Apartments for I&I in response to customer complaints  
15 about high bills. ORS again reviewed the I&I statistics on the CWS Beaufort  
16 system in support of this case and determined that no excessive I&I problems  
17 exist in the system serving Palmetto Apartments.

18 **Q. DOES ORS SUPPORT THE CWS REQUEST TO MODIFY ITS TERMS**  
19 **AND CONDITIONS RELATING TO WATER AND SEWER SERVICE**  
20 **CONNECTION FEE?**

21 A. No. ORS does not support the proposed modification of the language for  
22 Water Service Connection Fee (CWS Application Exhibit A page 2 and 3) and  
23 Sewer Service Connection Fee (CWS Application A page 7). While CWS is not



1 requesting an increase to either fee, the clarifying language proposed by CWS is  
2 misleading. CWS has requested the following language be added for water and  
3 sewer service connection fees:

4 “...Service Connection fees include the cost to physically install the  
5 utility’s service line from its main to the customer’s premise...”

6 ORS’s review indicates that CWS’s work related to connecting a new customer to  
7 its main is limited to inspection, administration, and supervision. There is no  
8 physical work completed by CWS to install the service line for new customers,  
9 since this work is completed by the developer or builder. ORS recommends the  
10 Commission keep the current tariff language as it relates to Water Service  
11 Connection and Sewer Service Connection.

12 **Q. PLEASE EXPLAIN EXHIBIT WJM-4 OF YOUR REPORT.**

13 A. Exhibit WJM-4 is a summary of the current PSC approved rates for CWS  
14 and CWS’s proposed rates.

15 **Q. DO YOU HAVE AN ADDITIONAL RECOMMENDATION FOR CWS**  
16 **REGARDING ITS WATER SYSTEM?**

17 A. Yes. To support the need to improve its non-revenue water statistics, ORS  
18 recommends that either CWS use meters on all release points (i.e., blow-off  
19 and/or flushing locations, etc.) or demonstrate it can properly quantify and  
20 document its water consumption for flushing. Quantifying water used in flushing  
21 improves accountability and will assist CWS as it implements its AWWA water  
22 audit program.

1    **Q.    ARE THERE ANY OUTSTANDING INFORMATION REQUESTS THAT**  
2           **COULD AFFECT THE ABOVE TESTIMONY?**

3    A.           Yes. ORS has requested further information from CWS. If changes are  
4           deemed necessary by ORS based on the information received and reviewed, ORS  
5           will file supplemental direct testimony to reflect these findings.

6    **Q.    DOES THAT CONCLUDE YOUR TESTIMONY?**

7    A.           Yes it does.



## ORS WATER SYSTEM INSPECTION REPORT

### Inspection Overview

**Date Inspected:** July 18, 2011  
**Inspector Name:** Willie Morgan, Dawn Hipp  
**Docket Number:** 2011-47-WS  
**Utility Name:** Carolina Water Service, Inc. – Falcon Ranches Subdivision  
**Utility Representative:** Robert Gilroy  
**Number of Customers:** 98 customers  
**System Type (distribution, well, etc):** Wells, storage, & distribution  
**Location of System:** Falcon Ranches Subdivision - Lexington County  
**Location of Utility Office:** 110 Queen Parkway, West Columbia  
**Treatment Type:** Chlorination, pH adjustment  
**Permit #:** 3250016  
**Last SC DHEC Compliance Rating:** Satisfactory – May 4, 2010  
**Frequency checked by Licensed Operator:** Daily  
**Wastewater Provider:** Septic

	System Components Inspected	Specific Type	#	P S I	Capacity	Compliance		Comments
						Yes	No	
<b>1</b>	Well Sites	<b>bored</b>	<b>2</b>			<b>X</b>		
<b>2</b>	Pump Houses		<b>2</b>			<b>X</b>		
<b>3</b>	Storage Tank	Pressurized	<b>1</b>		<b>10k gal</b>	<b>X</b>		
<b>3a</b>	Storage Tank	Non-Pressurized						
<b>3b</b>	Storage Tank	Overhead						
<b>4</b>	Chlorinator					<b>X</b>		
<b>5</b>	Other Chemicals in use					<b>X</b>		<b>Soda ash</b>
<b>6</b>	Meters					<b>X</b>		
<b>7</b>	Hydrants					<b>X</b>		<b>Flushing only</b>
<b>8</b>	Electrical Wiring acceptable					<b>X</b>		
<b>9</b>	Piping acceptable					<b>X</b>		
<b>10</b>	System free of leaks					<b>X</b>		
<b>11</b>	Access road adequate					<b>X</b>		
<b>12</b>	Ability for service area to expand					<b>X</b>		

### Additional Comments:



## ORS WATER SYSTEM INSPECTION REPORT

### Inspection Overview

**Date Inspected:** July 18, 2011  
**Inspector Name:** Willie Morgan, Dawn Hipp  
**Docket Number:** 2011-47-WS  
**Utility Name:** Carolina Water Service, Inc. – Glenn Village/Stonebridge  
**Utility Representative:** Robert Gilroy  
**Number of Customers:** 206 customers and 195 customer from Glenn Village  
**System Type (distribution, well, etc):** I/Cambridge Hills area  
**Location of System:** Wells, distribution  
**Location of Utility Office:** Glenn Village/Stonebridge/Sandy Creek/Cambridge Hills  
**Treatment Type:** Subdivisions, Lexington County  
**Permit #:** 110 Queen Parkway, West Columbia  
**Last SC DHEC Compliance Rating:** Chlorination, pH adjustment, radium removal  
**Frequency checked by Licensed Operator:** 3250058  
**Wastewater Provider:** Satisfactory – May 5, 2010  
 Daily  
 Carolina Water Service, Inc., septic

	System Components Inspected	Specific Type	#	PSI	Capacity	Compliance		Comments
						Yes	No	
<b>1</b>	Well Sites	<b>bored</b>	<b>6</b>			<b>X</b>		<b>1 well abandoned</b>
<b>2</b>	Pump Houses	<b>wood</b>	<b>6</b>			<b>X</b>		
<b>3</b>	Storage Tank	Pressurized	<b>4</b>		<b>45kgal</b>	<b>X</b>		
<b>3a</b>	Storage Tank	Non-Pressurized						
<b>3b</b>	Storage Tank	Overhead						
<b>4</b>	Chlorinator					<b>X</b>		
<b>5</b>	Other Chemicals in use					<b>X</b>		<b>NaOH, KCL</b>
<b>6</b>	Meters					<b>X</b>		
<b>7</b>	Hydrants					<b>X</b>		<b>Flushing only</b>
<b>8</b>	Electrical Wiring acceptable					<b>X</b>		
<b>9</b>	Piping acceptable					<b>X</b>		
<b>10</b>	System free of leaks					<b>X</b>		
<b>11</b>	Access road adequate					<b>X</b>		
<b>12</b>	Ability for service area to expand					<b>X</b>		

**Additional Comments:** Glenn Village I (USSC water system), Glenn Village II, & Stonebridge well systems were interconnected in 2008 per DHEC. No application to transfer the customer base associated with Glenn Village I has been filed with the PSC to date. Well #1 in Glenn Village II area of system has radium above MCL and treatment has been added to reduce radium level in water pumped from this well.



## ORS WATER SYSTEM INSPECTION REPORT

### Inspection Overview

**Date Inspected:** July 18, 2011  
**Inspector Name:** Willie Morgan, Dawn Hipp  
**Docket Number:** 2011-47-WS  
**Utility Name:** Carolina Water Service, Inc. – Hidden Valley Country Club  
**Utility Representative:** Robert Gilroy  
**Number of Customers:** 185 customers  
**System Type (distribution, well, etc):** Wells, distribution  
**Location of System:** Hidden Valley Country Club Subdivision, Lexington County  
**Location of Utility Office:** 110 Queen Parkway, West Columbia  
**Treatment Type:** Chlorination, pH adjustment  
**Permit #:** 3250073  
**Last SC DHEC Compliance Rating:** Satisfactory – May 4, 2010  
**Frequency checked by Licensed Operator:** Daily  
**Wastewater Provider:** Septic

	System Components Inspected	Specific Type	#	PSI	Capacity	Compliance		Comments
						Yes	No	
<b>1</b>	Well Sites	<b>bored</b>	<b>3</b>			<b>X</b>		<b>2 wells on line; 1 with turbidity issues off line</b>
<b>2</b>	Pump Houses	<b>wood</b>	<b>2</b>			<b>X</b>		
<b>3</b>	Storage Tank	Pressurized	<b>1</b>		<b>10k gal</b>	<b>X</b>		
<b>3a</b>	Storage Tank	Non-Pressurized						
<b>3b</b>	Storage Tank	Overhead	<b>1</b>		<b>75k gal</b>	<b>X</b>		<b>Telemetry system</b>
<b>4</b>	Chlorinator					<b>X</b>		
<b>5</b>	Other Chemicals in use					<b>X</b>		<b>NaOH</b>
<b>6</b>	Meters					<b>X</b>		
<b>7</b>	Hydrants					<b>X</b>		<b>Flushing only</b>
<b>8</b>	Electrical Wiring acceptable					<b>X</b>		
<b>9</b>	Piping acceptable					<b>X</b>		
<b>10</b>	System free of leaks					<b>X</b>		
<b>11</b>	Access road adequate					<b>X</b>		
<b>12</b>	Ability for service area to expand					<b>X</b>		

### Additional Comments:



## ORS WATER SYSTEM INSPECTION REPORT

### Inspection Overview

**Date Inspected:** July 20, 2011  
**Inspector Name:** Willie Morgan  
**Docket Number:** 2011-47-WS  
**Utility Name:** Carolina Water Service, Inc. – Hunter's Glen Subdivision  
**Utility Representative:** Tony Ellinger  
**Number of Customers:** 94 customers  
**System Type (distribution, well, etc):** Well, storage, & distribution  
**Location of System:** Hunter's Glen Subdivision - Aiken County  
**Location of Utility Office:** 110 Queen Parkway, West Columbia  
**Treatment Type:** Chlorination, pH adjustment  
**Permit #:** 0250005  
**Last SC DHEC Compliance Rating:** Satisfactory – April 14, 2011  
**Frequency checked by Licensed Operator:** Daily  
**Wastewater Provider:** Septic

	System Components Inspected	Specific Type	#	P S I	Capacity	Compliance		Comments
						Yes	No	
<b>1</b>	Well Sites	<b>bored</b>	<b>3</b>			<b>X</b>		<b>Well #1 off-line.</b>
<b>2</b>	Pump Houses							
<b>3</b>	Storage Tank	Pressurized	<b>2</b>		<b>10k each</b>	<b>X</b>		
<b>3a</b>	Storage Tank	Non-Pressurized						
<b>3b</b>	Storage Tank	Overhead						
<b>4</b>	Chlorinator					<b>X</b>		
<b>5</b>	Other Chemicals in use					<b>X</b>		
<b>6</b>	Meters					<b>X</b>		
<b>7</b>	Hydrants					<b>X</b>		<b>Flushing only</b>
<b>8</b>	Electrical Wiring acceptable					<b>X</b>		
<b>9</b>	Piping acceptable					<b>X</b>		
<b>10</b>	System free of leaks						<b>X</b>	<b>See below</b>
<b>11</b>	Access road adequate					<b>X</b>		
<b>12</b>	Ability for service area to expand					<b>X</b>		

**Additional Comments:** Booster pumps used for transmission in looped system. Leak was discovered inside fenced area of well #2. The leak appeared to be coming from the utility service line providing water service to the nearby customers.



## ORS WATER SYSTEM INSPECTION REPORT

### Inspection Overview

**Date Inspected:** July 18 & 20, 2011  
**Inspector Name:** Willie Morgan, Dawn Hipp  
**Docket Number:** 2011-47-WS  
**Utility Name:** Carolina Water Service, Inc. – I-20  
**Utility Representative:** Robert Gilroy, Tony Ellinger  
**Number of Customers:** 2249 customers  
**System Type (distribution, well, etc):** Distribution, purchase water from City of West Columbia  
**Location of System:** Oak Grove Subdivision & surrounding area, Lexington County  
**Location of Utility Office:** 110 Queen Parkway, West Columbia  
**Treatment Type:** None  
**Permit #:** 3250012  
**Last SC DHEC Compliance Rating:** Satisfactory – May 4, 2010  
**Frequency checked by Licensed Operator:** Daily  
**Wastewater Provider:** Carolina Water Service, Inc., & septic

	System Components Inspected	Specific Type	#	P S I	Capacity	Compliance		Comments
						Yes	No	
<b>1</b>	Well Sites							All water is purchased from City of West Columbia
<b>2</b>	Pump Houses							
<b>3</b>	Storage Tank	Pressurized						
<b>3a</b>	Storage Tank	Non-Pressurized						
<b>3b</b>	Storage Tank	Overhead	<b>1</b>			<b>NA</b>	<b>NA</b>	See comment below
<b>4</b>	Chlorinator							No treatment by CWS
<b>5</b>	Other Chemicals in use							No treatment by CWS
<b>6</b>	Meters					<b>X</b>		
<b>7</b>	Hydrants					<b>X</b>		Flushing only
<b>8</b>	Electrical Wiring acceptable					<b>X</b>		
<b>9</b>	Piping acceptable					<b>X</b>		
<b>10</b>	System free of leaks					<b>X</b>		
<b>11</b>	Access road adequate					<b>X</b>		
<b>12</b>	Ability for service area to expand					<b>X</b>		

**Additional Comments:** Elevated storage tank not in use by CWS. System is provided with water through three master meters from City of West Columbia.



## ORS WATER SYSTEM INSPECTION REPORT

### Inspection Overview

**Date Inspected:** July 18, 2011  
**Inspector Name:** Willie Morgan, Dawn Hipp  
**Docket Number:** 2011-47-WS  
**Utility Name:** Carolina Water Service, Inc. – Indian Fork/Forty Love Point Subdivisions  
**Utility Representative:** Robert Gilroy  
**Number of Customers:** 204 customers  
**System Type** (distribution, well, etc): Wells, storage, & distribution  
**Location of System:** Indian Fork/Forty Love Point Subdivisions - Lexington County  
**Location of Utility Office:** 110 Queen Parkway, West Columbia  
**Treatment Type:** Chlorination, pH adjustment, softener  
**Permit #:** 3250066  
**Last SC DHEC Compliance Rating:** Satisfactory – May 12, 2010  
**Frequency checked by Licensed Operator:** Daily  
**Wastewater Provider:** Town of Chapin, Richland County or Septic

	System Components Inspected	Specific Type	#	P S I	Capacity	Compliance		Comments
						Yes	No	
<b>1</b>	Well Sites	<b>bored</b>	<b>8</b>			<b>X</b>		
<b>2</b>	Pump Houses							
<b>3</b>	Storage Tank	Pressurized	<b>4</b>		<b>35k gal</b>	<b>X</b>		<b>2009-2010 Tanks cleaned</b>
<b>3a</b>	Storage Tank	Non-Pressurized						
<b>3b</b>	Storage Tank	Overhead						
<b>4</b>	Chlorinator					<b>X</b>		
<b>5</b>	Other Chemicals in use					<b>X</b>		
<b>6</b>	Meters					<b>X</b>		
<b>7</b>	Hydrants					<b>X</b>		<b>Flushing only</b>
<b>8</b>	Electrical Wiring acceptable					<b>X</b>		
<b>9</b>	Piping acceptable					<b>X</b>		
<b>10</b>	System free of leaks					<b>X</b>		
<b>11</b>	Access road adequate					<b>X</b>		
<b>12</b>	Ability for service area to expand					<b>X</b>		

**Additional Comments:** There are two 10k gallon tanks and two 6.5k gallon tanks for a total storage capacity of 33k gallons. Filter was installed due to complaints about particles/dirt in water. Quarterly flushing program.





## ORS WATER SYSTEM INSPECTION REPORT

### Inspection Overview

**Date Inspected:** July 21, 2011  
**Inspector Name:** Willie Morgan, Dawn Hipp  
**Docket Number:** 2011-47-WS  
**Utility Name:** Carolina Water Service, Inc. – River Hills  
**Utility Representative:** Mac Mitchell, Dick Henson (for Forest Oaks & River Hills Area)  
**Number of Customers:** 2903 customers  
**System Type (distribution, well, etc):** Distribution, purchased water from York County (which is purchased from City of Rock Hill)  
**Location of System:** Lake Wylie area (Hwy 49 & 274 area) – York County  
**Location of Utility Office:** 110 Queen Parkway, West Columbia  
**Treatment Type:** None  
**Permit #:** 4650006  
**Last SC DHEC Compliance Rating:** Satisfactory – May 11, 2010  
**Frequency checked by Licensed Operator:** Daily  
**Wastewater Provider:** Carolina Water Service, Inc., & septic

	System Components Inspected	Specific Type	#	P S I	Capacity	Compliance		Comments
						Yes	No	
<b>1</b>	Well Sites							<b>Purchases water from York County</b>
<b>2</b>	Pump Houses							
<b>3</b>	Storage Tank	Pressurized						
<b>3a</b>	Storage Tank	Non-Pressurized						
<b>3b</b>	Storage Tank	Overhead						<b>See comment below</b>
<b>4</b>	Chlorinator							<b>No treatment by CWS</b>
<b>5</b>	Other Chemicals in use							<b>No treatment by CWS</b>
<b>6</b>	Meters					<b>X</b>		<b>See comment below</b>
<b>7</b>	Hydrants					<b>X</b>		<b>Fire protection &amp; flushing</b>
<b>8</b>	Electrical Wiring acceptable					<b>X</b>		
<b>9</b>	Piping acceptable					<b>X</b>		
<b>10</b>	System free of leaks					<b>X</b>		
<b>11</b>	Access road adequate					<b>X</b>		
<b>12</b>	Ability for service area to expand					<b>X</b>		

**Additional Comments:** Elevated storage tank is owned by CWS but leased and maintained by York County. ORS witnessed service termination procedures during inspection. Field technician turned service valve into off position, but did not lock the valve to ensure service termination. Each service valve is to be locked to ensure termination of service. This process was confirmed by Regional Manager.



## ORS WATER SYSTEM INSPECTION REPORT

### Inspection Overview

**Date Inspected:** July 18, 2011  
**Inspector Name:** Willie Morgan, Dawn Hipp  
**Docket Number:** 2011-47-WS  
**Utility Name:** Carolina Water Service, Inc. – Mallard Cove  
**Utility Representative:** Robert Gilroy  
**Number of Customers:** 29 customers  
**System Type (distribution, well, etc):** Well, distribution  
**Location of System:** Mallard Cove/Seay Cove Subdivisions, Lexington County  
**Location of Utility Office:** 110 Queen Parkway, West Columbia  
**Treatment Type:** Chlorination, pH adjustment  
**Permit #:** 3250076  
**Last SC DHEC Compliance Rating:** Satisfactory – May 3, 2010  
**Frequency checked by Licensed Operator:** Daily  
**Wastewater Provider:** Carolina Water Service, Inc.

	System Components Inspected	Specific Type	#	P S I	Capacity	Compliance		Comments
						Yes	No	
<b>1</b>	Well Sites	<b>bored</b>	<b>1</b>			<b>X</b>		
<b>2</b>	Pump Houses	<b>wood</b>	<b>1</b>			<b>X</b>		
<b>3</b>	Storage Tank	Pressurized	<b>1</b>		<b>2k gal</b>	<b>X</b>		<b>Exterior needs to be cleaned</b>
<b>3a</b>	Storage Tank	Non-Pressurized						
<b>3b</b>	Storage Tank	Overhead						
<b>4</b>	Chlorinator					<b>X</b>		
<b>5</b>	Other Chemicals in use					<b>X</b>		
<b>6</b>	Meters					<b>X</b>		
<b>7</b>	Hydrants							<b>None observed</b>
<b>8</b>	Electrical Wiring acceptable					<b>X</b>		
<b>9</b>	Piping acceptable					<b>X</b>		
<b>10</b>	System free of leaks					<b>X</b>		
<b>11</b>	Access road adequate					<b>X</b>		
<b>12</b>	Ability for service area to expand					<b>X</b>		

### Additional Comments:



## ORS WATER SYSTEM INSPECTION REPORT

### Inspection Overview

**Date Inspected:** July 26, 2011  
**Inspector Name:** Willie Morgan, Dawn Hipp  
**Docket Number:** 2011-47-WS  
**Utility Name:** Carolina Water Service, Inc. – Pocalla Subdivision  
**Utility Representative:** Mac Mitchell, Randall Plummer  
**Number of Customers:** 97 customers  
**System Type (distribution, well, etc):** Well system with storage  
**Location of System:** Sumter County  
**Location of Utility Office:** 110 Queen Parkway, West Columbia  
**Treatment Type:** Chlorination, corrosion inhibitor, pH adjustment  
**Permit #:** 4350007  
**Last SC DHEC Compliance Rating:** Satisfactory – February 2, 2011  
**Frequency checked by Licensed Operator:** Daily  
**Wastewater Provider:** Carolina Water Service, Inc.

	System Components Inspected	Specific Type	#	P S I	Capacity	Compliance		Comments
						Yes	No	
<b>1</b>	Well Sites	<b>bored</b>	<b>2</b>			<b>X</b>		
<b>2</b>	Pump Houses		<b>1</b>			<b>X</b>		
<b>3</b>	Storage Tank	Pressurized	<b>1</b>		<b>7.5k gal</b>	<b>X</b>		
<b>3a</b>	Storage Tank	Non-Pressurized						
<b>3b</b>	Storage Tank	Overhead						
<b>4</b>	Chlorinator					<b>X</b>		
<b>5</b>	Other Chemicals in use					<b>X</b>		
<b>6</b>	Meters					<b>X</b>		
<b>7</b>	Hydrants					<b>X</b>		<b>Flushing only</b>
<b>8</b>	Electrical Wiring acceptable					<b>X</b>		
<b>9</b>	Piping acceptable					<b>X</b>		
<b>10</b>	System free of leaks					<b>X</b>		
<b>11</b>	Access road adequate					<b>X</b>		
<b>12</b>	Ability for service area to expand					<b>X</b>		

### Additional Comments:



## ORS WATER SYSTEM INSPECTION REPORT

### Inspection Overview

**Date Inspected:** July 21, 2011  
**Inspector Name:** Willie Morgan, Dawn Hipp  
**Docket Number:** 2011-47-WS  
**Utility Name:** Carolina Water Service, Inc. – Heatherwood/Blue Ridge Terrace Subdivisions  
**Utility Representative:** Robert Gilroy  
**Number of Customers:** 158 customers  
**System Type** (distribution, well, etc): Wells, distribution  
**Location of System:** Heatherwood/Blue Ridge Subdivision, Lexington County  
**Location of Utility Office:** 110 Queen Parkway, West Columbia  
**Treatment Type:** Chlorination, pH adjustment  
**Permit #:** 3250015  
**Last SC DHEC Compliance Rating:** Satisfactory – May 4, 2010  
**Frequency checked by Licensed Operator:** Daily  
**Wastewater Provider:** Septic

	System Components Inspected	Specific Type	#	P S I	Capacity	Compliance		Comments
						Yes	No	
<b>1</b>	Well Sites	<b>bored</b>	<b>4</b>			<b>X</b>		
<b>2</b>	Pump Houses	<b>wood</b>	<b>2</b>			<b>X</b>		
<b>3</b>	Storage Tank	Pressurized	<b>1</b>		<b>30k gal</b>	<b>X</b>		
<b>3a</b>	Storage Tank	Non-Pressurized						
<b>3b</b>	Storage Tank	Overhead						
<b>4</b>	Chlorinator							<b>N/A</b>
<b>5</b>	Other Chemicals in use							<b>Soda ash</b>
<b>6</b>	Meters					<b>X</b>		
<b>7</b>	Hydrants					<b>X</b>		<b>Flushing only</b>
<b>8</b>	Electrical Wiring acceptable					<b>X</b>		
<b>9</b>	Piping acceptable					<b>X</b>		
<b>10</b>	System free of leaks					<b>X</b>		
<b>11</b>	Access road adequate					<b>X</b>		
<b>12</b>	Ability for service area to expand					<b>X</b>		

### Additional Comments:



## ORS WATER SYSTEM INSPECTION REPORT

### Inspection Overview

**Date Inspected:** July 26, 2011  
**Inspector Name:** Willie Morgan, Dawn Hipp  
**Docket Number:** 2011-47-WS  
**Utility Name:** Carolina Water Service, Inc. – Rock Bluff Subdivision  
**Utility Representative:** Mac Mitchell  
**Number of Customers:** 22  
**System Type (distribution, well, etc):** Well system with storage  
**Location of System:** Rock Bluff, Sumter County  
**Location of Utility Office:** 110 Queen Parkway, West Columbia  
**Treatment Type:** Chlorination, corrosion inhibitor, pH adjustment  
**Permit #:** 4550001  
**Last SC DHEC Compliance Rating:** Satisfactory – December 2, 2010  
**Frequency checked by Licensed Operator:** Daily  
**Wastewater Provider:** CWS

	System Components Inspected	Specific Type	#	P S I	Capacity	Compliance		Comments
						Yes	No	
<b>1</b>	Well Sites	<b>bored</b>	<b>1</b>			<b>X</b>		
<b>2</b>	Pump Houses	<b>block</b>	<b>1</b>			<b>X</b>		
<b>3</b>	Storage Tank	Pressurized	<b>1</b>		<b>3k gal</b>	<b>X</b>		
<b>3a</b>	Storage Tank	Non-Pressurized						
<b>3b</b>	Storage Tank	Overhead						
<b>4</b>	Chlorinator					<b>X</b>		
<b>5</b>	Other Chemicals in use					<b>X</b>		
<b>6</b>	Meters					<b>X</b>		
<b>7</b>	Hydrants							<b>None present</b>
<b>8</b>	Electrical Wiring acceptable					<b>X</b>		
<b>9</b>	Piping acceptable					<b>X</b>		
<b>10</b>	System free of leaks					<b>X</b>		
<b>11</b>	Access road adequate					<b>X</b>		
<b>12</b>	Ability for service area to expand					<b>X</b>		<b>See comment below</b>

**Additional Comments:** Williamsburg Water & Sewer Authority has installed water taps to most of the premises in the subdivision. Almost all customers of CWS have paid connection charges to be connected to Williamsburg Water & Sewer Authority for water service.



## **ORS WASTEWATER SYSTEM INSPECTION REPORT**

### **Inspection Overview**

<b>Date Inspected:</b>	July 18, 2011
<b>Inspector Name:</b>	Willie Morgan, Dawn Hipp
<b>Docket Number:</b>	2011-47-WS
<b>Utility Name:</b>	Carolina Water Service, Inc. – Friarsgate
<b>Utility Representative:</b>	Robert Gilroy
<b>Number of Customers:</b>	3203 customers
<b>System Type (collection, force main, lagoon, etc):</b>	Collection, forced main, aerated lagoon
<b>Location of System:</b>	Friarsgate subdivision & surrounding area, Richland & Lexington Counties
<b>Location of Utility Office:</b>	110 Queen Parkway, West Columbia
<b>Treatment Type:</b>	Biological Treatment using a lined oxidation ditch and return activated sludge process
<b>Permit #:</b>	SC0036137
<b>Last SC DHEC Compliance Rating:</b>	Non-compliance (June 7 – 9, 2010)
<b>Frequency checked by WWTF Operator:</b>	Daily – Ralph Cook
<b>Drinking Water Provider:</b>	City of Columbia, wells, others

	System Components Inspected	Compliance		Comments
		Yes	No	
<b>1</b>	Chlorinator			None – Ultra Violet disinfection added in 2008-2009
<b>2</b>	Other chemicals in use			None
<b>3</b>	Aerators present	<b>X</b>		Various types of aerators, diffusers
<b>4</b>	Plant fenced and locked	<b>X</b>		
<b>5</b>	Warning Signs Visible	<b>X</b>		
<b>6</b>	Fence in good condition	<b>X</b>		
<b>7</b>	Dikes in good condition	<b>X</b>		Concrete lined oxidation ditch; EQ basin lined with plastic mesh in 2007
<b>8</b>	Odor non-existent or limited	<b>X</b>		
<b>9</b>	Grass mowed	<b>X</b>		
<b>10</b>	Duckweed/Algae acceptable	<b>X</b>		
<b>11</b>	Grease build-up acceptable	<b>X</b>		
<b>12</b>	Plant free of debris	<b>X</b>		Manual bar screen
<b>13</b>	Effluent Color acceptable	<b>X</b>		
<b>14</b>	Lift Stations present	<b>X</b>		3 lift stations located throughout system
<b>15</b>	Failure Warning System adequate	<b>X</b>		
<b>16</b>	Electric Wiring adequate	<b>X</b>		
<b>17</b>	System free of leaks	<b>X</b>		
<b>18</b>	System free of overflows	<b>X</b>		
<b>19</b>	Access road adequate	<b>X</b>		
<b>20</b>	Ability for service area to expand	<b>X</b>		

**Additional Comments:** Discharge to unnamed tributary. No odor present outside of fenced area at WWTP at time of inspection. Customer base includes single family dwellings, apartment buildings, and various commercial customers.



## **ORS WASTEWATER SYSTEM INSPECTION REPORT**

### **Inspection Overview**

<b>Date Inspected:</b>	July 18, 2011
<b>Inspector Name:</b>	Willie Morgan, Dawn Hipp
<b>Docket Number:</b>	2011-47-WS
<b>Utility Name:</b>	Carolina Water Service, Inc. – I-20
<b>Utility Representative:</b>	Robert Gilroy
<b>Number of Customers:</b>	2093 customers
<b>System Type (collection, force main, lagoon, etc):</b>	Collection, forced main, aerated lagoon
<b>Location of System:</b>	Oak Grove Subdivision & surrounding area, Lexington County
<b>Location of Utility Office:</b>	110 Queen Parkway, West Columbia
<b>Treatment Type:</b>	Biological Treatment using aerated lagoon – 0.80 MGD Plant
<b>Permit #:</b>	SC0035564
<b>Last SC DHEC Compliance Rating:</b>	Non-compliance (April 27 – 29, 2009)
<b>Frequency checked by WWTF Operator:</b>	Daily
<b>Drinking Water Provider:</b>	Carolina Water Service, Inc., City of West Columbia, wells, others

	System Components Inspected	Compliance		Comments
		Yes	No	
1	Chlorinator	X		
2	Other chemicals in use	X		
3	Aerators present	X		Various aerators
4	Plant fenced and locked	X		
5	Warning Signs Visible	X		
6	Fence in good condition	X		
7	Dikes in good condition	X		
8	Odor non-existent or limited	X		
9	Grass mowed	X		
10	Duckweed/Algae acceptable	X		
11	Grease build-up acceptable	X		
12	Plant free of debris	X		
13	Effluent Color acceptable	X		
14	Lift Stations present	X		Many lift stations located throughout system
15	Failure Warning System adequate	X		
16	Electric Wiring adequate	X		
17	System free of leaks	X		
18	System free of overflows	X		
19	Access road adequate	X		
20	Ability for service area to expand		X	DHEC moratorium on taps due to continued discussions under the 201/208 plan

**Additional Comments:** Discharge to Saluda River. Customer base includes single family dwellings, apartment buildings, and various commercial customers which includes Midlands Utility, Inc.



## **ORS WASTEWATER SYSTEM INSPECTION REPORT**

### **Inspection Overview**

<b>Date Inspected:</b>	July 21, 2011
<b>Inspector Name:</b>	Willie Morgan, Dawn Hipp
<b>Docket Number:</b>	2011-47-WS
<b>Utility Name:</b>	Carolina Water Service, Inc. – River Hills
<b>Utility Representative:</b>	Mac Mitchell, Dick Henson (for Forest Oaks & River Hills Area)
<b>Number of Customers:</b>	2548 customers
<b>System Type (collection, force main, lagoon, etc):</b>	Collection, forced main
<b>Location of System:</b>	River Hills Subdivision & surrounding area, Lexington County
<b>Location of Utility Office:</b>	110 Queen Parkway, West Columbia
<b>Treatment Type:</b>	None – discharged to York County
<b>Permit #:</b>	SSS000752
<b>Last SC DHEC Compliance Rating:</b>	N/A
<b>Frequency checked by WWTF Operator:</b>	Daily
<b>Drinking Water Provider:</b>	Carolina Water Service, Inc. & wells

	System Components Inspected	Compliance		Comments
		Yes	No	
1	Chlorinator			None
2	Other chemicals in use			None
3	Aerators present			None
4	Plant fenced and locked	X		
5	Warning Signs Visible	X		
6	Fence in good condition	X		
7	Dikes in good condition			None
8	Odor non-existent or limited	X		
9	Grass mowed	X		
10	Duckweed/Algae acceptable			N/A
11	Grease build-up acceptable			None
12	Plant free of debris	X		Manual bar screen
13	Effluent Color acceptable			N/A
14	Lift Stations present	X		62 lift stations located throughout system
15	Failure Warning System adequate	X		
16	Electric Wiring adequate	X		
17	System free of leaks	X		
18	System free of overflows	X		
19	Access road adequate	X		
20	Ability for service area to expand	X		

**Additional Comments:** No odors present outside of wastewater transfer location to York County. Sewer system is collection only with discharge to York County. Customer base includes single family dwellings, apartment buildings, and various commercial customers.





## **ORS WASTEWATER SYSTEM INSPECTION REPORT**

### **Inspection Overview**

**Date Inspected:** July 26, 2011  
**Inspector Name:** Willie Morgan, Dawn Hipp  
**Docket Number:** 2011-47-WS  
**Utility Name:** Carolina Water Service, Inc. – Oakland Plantation  
**Utility Representative:** Mac Mitchell, Randall Plummer  
**Number of Customers:** 243 customers  
**System Type (collection, force main, lagoon, etc):** Collection, forced main, aerated lagoon  
**Location of System:** Oakland Plantation Subdivision, Sumter County  
**Location of Utility Office:** 110 Queen Parkway, West Columbia  
**Treatment Type:** Aerated lagoon/chlorination and dechlorination  
**Permit #:** SC0030678  
**Last SC DHEC Compliance Rating:** Ammonia-Nitrogen permit exceedance (March 23, 2011)  
**Frequency checked by WWTF Operator:** Daily  
**Drinking Water Provider:** Utilities Services of South Carolina, Inc.

	System Components Inspected	Compliance		Comments
		Yes	No	
1	Chlorinator	X		
2	Other chemicals in use	X		Dechlorination using liquid sodium sulfite; metal scavenger
3	Aerators present	X		3 Aerators operating
4	Plant fenced and locked	X		
5	Warning Signs Visible	X		
6	Fence in good condition	X		
7	Dikes in good condition	X		Concrete lining
8	Odor non-existent or limited	X		
9	Grass mowed	X		
10	Duckweed/Algae acceptable	NA	NA	
11	Grease build-up acceptable	X		
12	Plant free of debris	X		Manual bar screen
13	Effluent Color acceptable	X		
14	Lift Stations present	X		1 lift station
15	Failure Warning System adequate	X		
16	Electric Wiring adequate	X		
17	System free of leaks	X		
18	System free of overflows	X		
19	Access road adequate	X		
20	Ability for service area to expand	X		

**Additional Comments:** Discharge to unnamed tributary. Plant components include EQ basin, horizontal clarifier and digester. Customer base includes single family dwellings, apartment buildings, and two restaurants. Area developed in 1960's.



## ORS WASTEWATER SYSTEM INSPECTION REPORT

### Inspection Overview

<b>Date Inspected:</b>	July 26, 2011
<b>Inspector Name:</b>	Willie Morgan, Dawn Hipp
<b>Docket Number:</b>	2011-47-WS
<b>Utility Name:</b>	Carolina Water Service, Inc. – Pocalla
<b>Utility Representative:</b>	Mac Mitchell, Randall Plummer
<b>Number of Customers:</b>	151 customers
<b>System Type (collection, force main, lagoon, etc):</b>	Collection/gravity flow
<b>Location of System:</b>	Pocalla Village/Belk Subdivisions, Sumter County
<b>Location of Utility Office:</b>	110 Queen Parkway, West Columbia
<b>Treatment Type:</b>	Activated sludge
<b>Permit #:</b>	SC0030724
<b>Last SC DHEC Compliance Rating:</b>	Satisfactory (November 3 – 5, 2008)
<b>Frequency checked by WWTF Operator:</b>	Daily
<b>Drinking Water Provider:</b>	Carolina Water Service, Inc.

	System Components Inspected	Compliance		Comments
		Yes	No	
1	Chlorinator	X		UV Disinfection installed but not permitted to operate
2	Other chemicals in use	X		Sodium sulfite
3	Aerators present	X		
4	Plant fenced and locked	X		
5	Warning Signs Visible	X		
6	Fence in good condition	X		
7	Dikes in good condition	X		
8	Odor non-existent or limited	X		
9	Grass mowed	X		
10	Duckweed/Algae acceptable	NA	NA	
11	Grease build-up acceptable	X		
12	Plant free of debris	X		
13	Effluent Color acceptable	X		
14	Lift Stations present			All gravity flow
15	Failure Warning System adequate	X		
16	Electric Wiring adequate	X		
17	System free of leaks	X		
18	System free of overflows	X		
19	Access road adequate	X		
20	Ability for service area to expand	X		

**Additional Comments:** Discharges to tributary of Pocotaligo River.



## ORS WASTEWATER SYSTEM INSPECTION REPORT

### Inspection Overview

**Date Inspected:** July 26, 2011  
**Inspector Name:** Willie Morgan, Dawn Hipp  
**Docket Number:** 2011-47-WS  
**Utility Name:** Carolina Water Service, Inc. – Whites Creek/Lincolnshire  
**Utility Representative:** Mac Mitchell, Randall Plummer  
**Number of Customers:** 244 customers  
**System Type (collection, force main, lagoon, etc):** Collection, forced main, activated sludge process  
**Location of System:** Whites Creek Rd, Georgetown County  
**Location of Utility Office:** West Columbia, SC  
**Treatment Type:** Activated sludge/chlorination and dechlorination  
**Permit #:** SC0030732  
**Last SC DHEC Compliance Rating:** Non-compliance (August 24 – 26, 2009)  
**Frequency checked by WWTF Operator:** Daily  
**Drinking Water Provider:** Georgetown Co. Rural Comm. Water Dist.

	System Components Inspected	Compliance		Comments
		Yes	No	
1	Chlorinator	X		
2	Other chemicals in use	X		
3	Aerators present	X		Mixers and extended air in tank
4	Plant fenced and locked	X		
5	Warning Signs Visible	X		
6	Fence in good condition	X		
7	Dikes in good condition	NA	NA	
8	Odor non-existent or limited	X		
9	Grass mowed	X		
10	Duckweed/Algae acceptable	NA	NA	
11	Grease build-up acceptable	X		
12	Plant free of debris	X		Manual bar screen
13	Effluent Color acceptable		X	Cloudy with solids. Sludge removal was ordered by CWS.
14	Lift Stations present	X		2 lift stations – 1 w/grinder pump
15	Failure Warning System adequate	X		
16	Electric Wiring adequate	X		
17	System free of leaks	X		
18	System free of overflows	X		
19	Access road adequate	X		
20	Ability for service area to expand	X		50 taps available

**Additional Comments:** Discharge to Sand Pit creek. Inflow/Infiltration a large problem in service area due to original construction of system by developer in the 1960's. Plant is severely impacted by rain and storm water run-off on date of inspection. DHEC notified by operator of effluent condition.

CAROLINA WATER SERVICE, INC.  
2011-47-WS  
REVENUE IMPACT ANALYSIS

EXHIBIT WJM-2

**Calculated CWS Test Year Revenue Overview**

Bill code	Customer Classification	Consumption in Gallons	Usage Charge per 1,000 gallons	Service Units	Base Facility Charge (BFC)	Test Year Calculated Revenues
400PWCOM	1" Purchase Water Comm.	5,896,971	\$2.03	282	\$29.02	\$20,154
400PWCOM	1.5" Purchase Water Comm.	5,439,060	\$2.03	173	\$58.04	\$21,082
400PWCOM	2" Purchase Water Comm.	23,570,727	\$2.03	361	\$92.86	\$81,371
400PWCOM	3" Purchase Water Comm.	8,978,540	\$2.03	110	\$174.12	\$37,380
400PWCOM	3/4" Purchase Water Comm.	882,820	\$2.03	51	\$11.09	\$2,358
400PWCOM	4" Purchase Water Comm.	2,658,330	\$2.03	16	\$290.20	\$10,040
400PWCOM	5/8" Purchase Water Comm.	8,093,710	\$2.03	1,045	\$11.09	\$28,019
400PWRES	1" Purchase Water Residential	5,055,440	\$2.03	1,200	\$11.09	\$23,571
400PWRES	1.5" Purchase Water Residential	1,834,600	\$2.03	612	\$11.09	\$10,511
400PWRES	2" Purchase Water Residential	7,564,200	\$2.03	780	\$11.09	\$24,006
400PWRES	3/4" Purchase Water Residential	74,380	\$2.03	13	\$11.09	\$295
400PWRES	4" Purchase Water Residential	234,000	\$2.03	176	\$11.09	\$2,427
400PWRES	5/8" Purchase Water Residential	186,046,152	\$2.03	33,770	\$11.09	\$752,183
400PWRRH	1" Purchased Water Res. - Riverhills	329,300	\$2.03	32	\$11.09	\$1,023
400PWRRH	2" Purchased Water Res. - Riverhills	13,811,160	\$2.03	5,126	\$11.09	\$84,884
400PWRRH	3" Purchased Water Res. - Riverhills	5,262,100	\$2.03	1,692	\$11.09	\$29,446
400PWRRH	3/4" Purchased Water Res. - Riverhills	3,210,440	\$2.03	708	\$11.09	\$14,369
400PWRRH	5/8" Purchased Water Res. - Riverhills	160,934,878	\$2.03	29,061	\$11.09	\$648,984
400PWRRH	6" Purchased Water Res. - Riverhills	2,629,500	\$2.03	480	\$11.09	\$10,661
400WCOM	1" Commercial	874,670	\$3.55	33	\$29.02	\$4,063
400WCOM	2" Commercial	1,050,500	\$3.55	10	\$92.86	\$4,658
400WCOM	5/8" Commercial	1,151,484	\$3.55	161	\$11.09	\$5,873
400WRES	1" Residential	1,156,090	\$3.55	224	\$11.09	\$6,588
400WRES	3/4" Residential	2,380,970	\$3.55	388	\$11.09	\$12,755
400WRES	5/8" Residential	107,038,333	\$3.55	19,561	\$11.09	\$596,918
	<b>Water Service Total</b>	<b>556,158,355</b>		<b>96,065</b>		<b>\$2,433,619</b>
400WWCOM	1" WW Commercial			12	\$39.00	
400WWCOM	1.5" WW Commercial			36	\$39.00	
400WWCOM	2" WW Commercial			816	\$39.00	
400WWCOM	5/8" WW Commercial			3,708	\$39.00	
	Subtotal WW Commercial			4,572	\$39.00	\$178,308
400WWCRH	1" Purchase WW Comm. - Riverhills			960	\$25.70	
400WWCRH	1.5" Purchase WW Comm. - Riverhills			1,452	\$25.70	
400WWCRH	2" Purchase WW Comm. - Riverhills			4,950	\$25.70	
400WWCRH	3" Purchase WW Comm. - Riverhills			2,052	\$25.70	
400WWCRH	3/4" Purchase WW Comm. - Riverhills			144	\$25.70	
400WWCRH	4" Purchase WW Comm. - Riverhills			1,032	\$25.70	
400WWCRH	5/8" Purchase WW Comm. - Riverhills			1,524	\$25.70	
	Subtotal WW Comm. - Riverhills			12,114	\$25.70	\$311,329
400WWRCP	5/8" Purchase WW Residential - Richland			4,788	\$25.70	\$123,052
400WWRES	1" WW Residential			1,152	\$39.00	
400WWRES	1.5" WW Residential			612	\$39.00	
400WWRES	2" WW Residential			576	\$39.00	
400WWRES	3/4" WW Residential			12	\$39.00	
400WWRES	4" WW Residential			192	\$39.00	
400WWRES	5/8" WW Residential			90,168	\$39.00	
	Subtotal WW Residential			92,712	\$39.00	\$3,615,768
400WWRB	Residential Wastewater Service			816	\$25.70	\$20,971
400WWRRH	1" Purchase WW Residential - Riverhills			12	\$25.70	
400WWRRH	2" Purchase WW Residential - Riverhills			1,008	\$25.70	
400WWRRH	3" Purchase WW Residential - Riverhills			1,584	\$25.70	
400WWRRH	3/4" Purchase WW Residential - Riverhills			516	\$25.70	
400WWRRH	5/8" Purchase WW Residential - Riverhills			28,560	\$25.70	
400WWRRH	6" Purchase WW Residential - Riverhills			4,728	\$25.70	
	Subtotal WW Residential - Riverhills			36,408	\$25.70	\$935,686
400WWRTC	5/8" Town of Chapin Purchase WW Residential			1,020	\$25.70	\$26,214
400WWTRL	2" WW Trailer Residential			780	\$27.77	
400WWTRL	5/8" WW Trailer Residential			348	\$27.77	
	Subtotal WW Trailer Residential			1,128	\$27.77	\$31,325
400TRT	Van Arsdale Wastewater Treatment			5,017	\$16.53	\$82,931
400WWRHT	Riverhills Wastewater Treatment			37	\$25.70	\$951
	<b>Sewer Service Total</b>			<b>158,612</b>		<b>\$5,326,535</b>
	<b>Total Water and Sewer Service Revenues</b>	<b>556,158,355</b>		<b>254,677</b>		<b>\$7,760,154</b>
Miscellaneous Revenues <sup>1</sup>						\$164,960
Miscellaneous Revenues - Other <sup>2</sup>						\$22,681
Other Wastewater Revenues (Non-CIAC tap fees)						\$71,713
Miscellaneous Revenue - Meter Fee						\$0
Miscellaneous Revenue - Disconnection Charge for water and sewer service						\$0
Miscellaneous Revenue - Tampering Charge						\$0
Miscellaneous Revenue - Pumping Charge						\$0
	<b>Total Miscellaneous Revenues</b>					<b>\$259,354</b>
Uncollectible Accounts <sup>3</sup>						<b>(\$79,035)</b>
	<b>Total Operating Revenues</b>					<b>\$7,940,473</b>

CAROLINA WATER SERVICE, INC.  
2011-47-WS  
REVENUE IMPACT ANALYSIS

EXHIBIT WJM-2

Calculated CWS Proposed Revenue Overview

Bill code	Customer Classification	Consumption in Gallons	Usage Charge per 1,000 gallons	Service Units	Base Facility Charge (BFC)	Test Year Calculated Revenues	Increase Amount	% Increase
400PWCOM	1" Purchase Water Comm.	5,896,971	\$3.71	282	\$51.99	\$36,539	\$16,385	81.30%
400PWCOM	1.5" Purchase Water Comm.	5,439,060	\$3.71	173	\$103.98	\$38,167	\$17,085	81.04%
400PWCOM	2" Purchase Water Comm.	23,570,727	\$3.71	361	\$166.36	\$147,503	\$66,132	81.27%
400PWCOM	3" Purchase Water Comm.	8,978,540	\$3.71	110	\$311.93	\$67,623	\$30,243	80.91%
400PWCOM	3/4" Purchase Water Comm.	882,820	\$3.71	51	\$19.87	\$4,289	\$1,931	81.89%
400PWCOM	4" Purchase Water Comm.	2,658,330	\$3.71	16	\$519.89	\$18,181	\$8,141	81.09%
400PWCOM	5/8" Purchase Water Comm.	8,093,710	\$3.71	1,045	\$19.87	\$50,792	\$22,773	81.28%
400PWRES	1" Purchase Water Residential	5,055,440	\$3.71	1,200	\$19.87	\$42,600	\$19,029	80.73%
400PWRES	1.5" Purchase Water Residential	1,834,600	\$3.71	612	\$19.87	\$18,967	\$8,456	80.45%
400PWRES	2" Purchase Water Residential	7,564,200	\$3.71	780	\$19.87	\$43,562	\$19,556	81.46%
400PWRES	3/4" Purchase Water Residential	74,380	\$3.71	13	\$19.87	\$534	\$239	81.02%
400PWRES	4" Purchase Water Residential	234,000	\$3.71	176	\$19.87	\$4,365	\$1,938	79.85%
400PWRES	5/8" Purchase Water Residential	186,046,152	\$3.71	33,770	\$19.87	\$1,361,241	\$609,058	80.97%
400PWRRH	1" Purchased Water Res. - Riverhills	329,300	\$3.71	32	\$19.87	\$1,858	\$835	81.62%
400PWRRH	2" Purchased Water Res. - Riverhills	13,811,160	\$3.71	5,126	\$19.87	\$153,093	\$68,209	80.36%
400PWRRH	3" Purchased Water Res. - Riverhills	5,262,100	\$3.71	1,692	\$19.87	\$53,142	\$23,696	80.47%
400PWRRH	3/4" Purchased Water Res. - Riverhills	3,210,440	\$3.71	708	\$19.87	\$25,979	\$11,610	80.80%
400PWRRH	5/8" Purchased Water Res. - Riverhills	160,934,878	\$3.71	29,061	\$19.87	\$1,174,510	\$525,526	80.98%
400PWRRH	6" Purchased Water Res. - Riverhills	2,629,500	\$3.71	480	\$19.87	\$19,293	\$8,632	80.97%
400WCOM	1" Commercial	874,670	\$6.49	33	\$51.99	\$7,392	\$3,329	81.93%
400WCOM	2" Commercial	1,050,500	\$6.49	10	\$166.36	\$8,481	\$3,823	82.07%
400WCOM	5/8" Commercial	1,151,484	\$6.49	161	\$19.87	\$10,672	\$4,799	81.71%
400WRES	1" Residential	1,156,090	\$6.49	224	\$19.87	\$11,954	\$5,366	81.45%
400WRES	3/4" Residential	2,380,970	\$6.49	388	\$19.87	\$23,162	\$10,407	81.59%
400WRES	5/8" Residential	107,038,333	\$6.49	19,561	\$19.87	\$1,083,356	\$486,438	81.49%
	<b>Water Service Total</b>	<b>556,158,355</b>		<b>96,065</b>		<b>\$4,407,255</b>	<b>\$1,973,636</b>	<b>81.10%</b>
400WWCOM	1" WW Commercial			12				
400WWCOM	1.5" WW Commercial			36				
400WWCOM	2" WW Commercial			816				
400WWCOM	5/8" WW Commercial			3,708				
	Subtotal WW Commercial			4,572	\$44.32	\$202,631	\$24,323	13.64%
400WWCRH	1" Purchase WW Comm. - Riverhills			960				
400WWCRH	1.5" Purchase WW Comm. - Riverhills			1,452				
400WWCRH	2" Purchase WW Comm. - Riverhills			4,950				
400WWCRH	3" Purchase WW Comm. - Riverhills			2,052				
400WWCRH	3/4" Purchase WW Comm. - Riverhills			144				
400WWCRH	4" Purchase WW Comm. - Riverhills			1,032				
400WWCRH	5/8" Purchase WW Comm. - Riverhills			1,524				
	Subtotal WW Comm. - Riverhills			12,114	\$29.20	\$353,728	\$42,399	13.62%
400WWRCP	5/8" Purchase WW Residential - Richland			4,788	\$29.20	\$139,810	\$16,758	13.62%
400WWRES	1" WW Residential			1,152				
400WWRES	1.5" WW Residential			612				
400WWRES	2" WW Residential			576				
400WWRES	3/4" WW Residential			12				
400WWRES	4" WW Residential			192				
400WWRES	5/8" WW Residential			90,168				
	Subtotal WW Residential			92,712	\$44.32	\$4,108,996	\$493,228	13.64%
400WWRBJ	Residential Wastewater Service			816	\$29.20	\$23,827	\$2,856	13.62%
400WWRRH	1" Purchase WW Residential - Riverhills			12				
400WWRRH	2" Purchase WW Residential - Riverhills			1,008				
400WWRRH	3" Purchase WW Residential - Riverhills			1,584				
400WWRRH	3/4" Purchase WW Residential - Riverhills			516				
400WWRRH	5/8" Purchase WW Residential - Riverhills			28,560				
400WWRRH	6" Purchase WW Residential - Riverhills			4,728				
	Subtotal WW Residential - Riverhills			36,408	\$29.20	\$1,063,114	\$127,428	13.62%
400WWRTC	5/8" Town of Chapin Purchase WW Residential			1,020	\$29.20	\$29,784	\$3,570	13.62%
400WWTRL	2" WW Trailer Residential			780				
400WWTRL	5/8" WW Trailer Residential			348				
	Subtotal WW Trailer Residential			1,128	\$31.56	\$35,600	\$4,275	13.65%
400TRT	Van Arsdale Wastewater Treatment			5,017	\$18.78	\$94,219	\$11,288	13.61%
400WWRHT	Riverhills Wastewater Treatment			37	\$29.20	\$1,080	\$129	13.56%
	<b>Sewer Service Total</b>			<b>158,612</b>		<b>\$6,052,789</b>	<b>\$726,254</b>	<b>13.63%</b>
	<b>Total Water and Sewer Service Revenues</b>	<b>556,158,355</b>		<b>254,677</b>		<b>\$10,460,044</b>	<b>\$2,699,890</b>	<b>34.79%</b>
Miscellaneous Revenues <sup>1</sup>						\$236,697	\$71,737	43.49%
Miscellaneous Revenues - Other <sup>2</sup>						\$22,681	\$0	0.00%
Other Wastewater Revenues (Non-CIAC tap fees)						\$71,713	\$0	0.00%
Miscellaneous Revenue - Meter Fee						\$23,000	\$23,000	
Miscellaneous Revenue - Disconnection Charge for water and sewer service						\$121,000	\$121,000	
Miscellaneous Revenue - Tampering Charge						\$2,950	\$2,950	
Miscellaneous Revenue - Pumping Charge						\$50,750	\$50,750	
<b>Total Miscellaneous Revenues</b>						<b>\$528,791</b>	<b>\$269,437</b>	<b>103.89%</b>
Uncollectible Accounts <sup>3</sup>						(\$79,840)	(\$805)	1.02%
<b>Total Operating Revenues</b>						<b>\$10,908,995</b>	<b>\$2,968,522</b>	<b>37.38%</b>

**CAROLINA WATER SERVICE, INC.**  
**2011-47-WS**  
**REVENUE IMPACT ANALYSIS**

**EXHIBIT WJM-2**

ORS Calculation Methodology Footnotes:

1. "Miscellaneous Revenues" The late payment charges will increase due to the increase in proposed rates.
2. "Miscellaneous Revenues - Other" is added by ORS to account for CWS' revenue received from a 3rd party vendor, Home Service, for the use of Carolina Water Service customer information to market a product to provide insurance for repairs that may be required on customer-owned piping. ORS allocated "Miscellaneous Revenue Other" based on ERCs.
3. ORS revenue for "Uncollectible Accounts" is set at the 2009 amount due to test year billing data and CWS collections procedure.
4. Consumption and Service Units reflected as reported by CWS during test year and adjusted based on the ORS review. Growth factor not included for comparison purposes.
5. Customer Tap Fees, Deposits and Interest on Deposits are not included in any of the above service revenue calculations.

Carolina Water Service, Inc.  
Docket No. 2011-47-WS  
Customer Growth Analysis

Exhibit WJM-3

Date	Water Customers	Sewer Customers	Total Customers
9/30/2009	7,465	10,772	18,237
9/30/2010	7,645	10,962	18,607
Average	7,555	10,867	18,422
<b>Growth Factor for Water</b>			
Date	# of Customers		
9/30/2010	7,645		
Average	7,555		
Growth Factor	0.0119126	1.19126%	
<b>Growth Factor for Sewer</b>			
Date	# of Customers		
9/30/2010	10,962		
Average	10,867		
Growth Factor	0.0087421	0.87421%	
<b>Growth Factor for Combined Operations</b>			
Date	# of Customers		
9/30/2010	18,607		
Average	18,422		
Growth Factor	0.0100423	1.00423%	

**CAROLINA WATER SERVICE, INC.  
2011-47-WS  
RATES OVERVIEW**

**EXHIBIT WJM-4**

**WATER**

**Current**

**Proposed**

**1. Monthly Charges**

Residential

Basic Facilities Charge	\$11.09 per unit	\$19.87 per unit
Commodity Charge	\$3.55 per 1,000 gallons or 134 cft.	\$6.49 per 1,000 gallons or 134 cft.

Commercial

Basic Facilities Charge  
by Meter Size

5/8 " meter	\$11.09	\$19.87
1 " meter	\$29.02	\$51.99
1.5 " meter	\$58.04	\$103.98
2 " meter	\$92.86	\$166.36
3 " meter	\$174.12	\$311.93
4 " meter	\$290.20	\$519.89
Commodity Charge	\$3.55 per 1,000 gallons or 134 cft.	\$6.49 per 1,000 gallons or 134 cft.

**Charges for Water Distribution Only**

Where water is purchased from a governmental body or agency or other entity for distribution and resale by the Company, the following rates apply:

Residential

Base Facilities Charge per single family  
house, condominium, mobile home  
or apartment unit:

\$11.09 per unit	\$19.87 per unit
------------------	------------------

Commodity Charge	\$2.03 per 1,000 gallons or 134 cft.	\$3.71 per 1,000 gallons or 134 cft.
------------------	---	---

Commercial

Basic Facilities Charge  
by Meter Size

5/8 " meter	\$11.09	\$19.87
1 " meter	\$29.02	\$51.99
1.5 " meter	\$58.04	\$103.98
2 " meter	\$92.86	\$166.36
3 " meter	\$174.12	\$311.93
4 " meter	\$290.20	\$519.89
Commodity Charge	\$2.03 per 1,000 gallons or 134 cft.	\$3.71 per 1,000 gallons or 134 cft.

CWS will also charge for the cost of water purchased from the bulk water provider. The charges imposed by the bulk water provider will be charged to the Utility's affected customers on a pro rata basis without markup.



**CAROLINA WATER SERVICE, INC.  
2011-47-WS  
RATES OVERVIEW**

**EXHIBIT WJM-4**

**WATER (continued)**

**2. Nonrecurring Charges**

A) Water Service Connection (New connections only)	\$300 per SFE*	\$300 per SFE*
B) Plant Impact Fee (New connections only)	\$400 per SFE*	\$400 per SFE*
C) Water Meter		
5/8 " meter	N/A	\$100 in addition to installing meter
all others   meter	N/A	actual cost of installation

**3. Account Set-Up, Reconnection Charges, Disconnection Charges and Tampering Charges**

A) Customer Account Charge - for new customers only.

B) All Areas	\$13.50	\$30.00
--------------	---------	---------

C) Reconnection Charges: In addition to any other charges that may be due, areconnection fee of thirty five dollars (\$35.00) shall be due prior to the Utility reconnecting service which has been disconnected for any reason set forth in Commission Rule R.103-732.5. Customers who ask to be reconnected within nine months of disconnection will be charged the monthly base facility charge for the service period they were disconnected. The reconnection fee shall also be due prior to reconnection if water service has been been disconnected at the request of the customer.

D) Disconnection Charge:	N/A	actual cost of disconnection
--------------------------	-----	---------------------------------

E) Tampering Charge:	N/A	actual cost to repair
----------------------	-----	--------------------------

**CAROLINA WATER SERVICE, INC.  
2011-47-WS  
RATES OVERVIEW**

**EXHIBIT WJM-4**

	<b>SEWER</b>	<b>Current</b>	<b>Proposed</b>
<b>1. Monthly Charges</b>			
Residential - charge per single-family house, condominium, villa, or apartment unit:		\$39.00 per unit	\$44.32 per unit
Mobile Homes:		\$27.77 per unit	\$31.56 per unit
Commercial:		\$39.00 per SFE*	\$44.32 per SFE*
Charge for Sewer Collection Only			
Residential - per single-family house, condominium, or apartment unit		\$25.70 per unit	\$29.20 per unit
Commercial - per single-family equivalent		\$25.70 per SFE*	\$29.20 per SFE*
Charge for Wholesale Service (Midlands Utility)		\$16.53 per SFE*	\$29.20 per SFE*
CWS will also charge for the cost of sewer treatment services by third-party. The charges imposed by the sewer treatment provider will be charged to the Utility's affected customers on a pro rata basis without markup.			
<u>Solids Interceptor Tanks</u>			
<u>A. Pumping Charge (per pumping episode)</u>		\$150.00	\$150.00 plus any additional cost
<u>B. Pump Repair or Replacement Charge</u>		varies	varies
<b>2. Nonrecurring Charges</b>			
A) Sewer Service Connection (New connections only)		\$300 per SFE*	\$300 per SFE*
B) Plant Impact Fee (New connections only)		\$400 per SFE*	\$400 per SFE*
<b>3. Notification, Account Set-Up, Reconnection Charges, Disconnection Charges and Tampering Charges</b>			
A) Notification Fee			
Service discontinuation notice		\$4.00	\$15.00
B) Customer Account Charge - for new customers only.			
All Areas		\$13.50	\$30.00
The charge will be waived if the customer also takes water service.			
C) Reconnection Charges: In addition to any other charges that may be due, a reconnection fee of two hundred fifty dollars (\$250.00) shall be due prior to the Utility reconnecting service which has been disconnected for any reason set forth in Commission Rule R.103-532.4. Where an elder valve has been previously installed, a reconnection charge of thirty-five dollars (\$35.00) shall be due. Customers who ask to be reconnected within nine months of disconnection will be charged the monthly base facility charge for the service period they were disconnected.			

**CAROLINA WATER SERVICE, INC.**  
**2011-47-WS**  
**RATES OVERVIEW**

**EXHIBIT WJM-4**

D) Disconnection Charge:	N/A	actual cost of disconnection
E) Tampering Charge:	N/A	actual cost to repair
* Single Family Equivalent		